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| Pensilva Primary School – Design Technology. Progression of Knowledge and Skills.  |
| EYFS  | Key Stage One Years 1 and 2  | Lower Key Stage TwoYears 3 and 4  | Upper Key Stage TwoYears 5 and 6  |
| **PD –**Progress towards a more fluent style of moving, with developing control and grace.Develop their small motor skills so that they can use a range of tools competently, safely and confidently.Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.**PD ELG –**Use a range of small tools, including scissors, paintbrushes and cutlery. | **Practical Skills****Food**• Cut, peel or grate ingredients safely and hygienically.• Measure or weigh using measuring cups or electronic scales.• Assemble or cook ingredients. | **Practical Skills****Food**• Prepare ingredients hygienically using appropriate utensils.• Measure ingredients to the nearest gram accurately.• Follow a recipe.• Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). | **Practical Skills****Food**• Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).• Measure accurately and calculate ratios of ingredients to scale up or down from a recipe.• Demonstrate a range of baking and cooking techniques.• Create and refine recipes, including ingredients, methods, cooking times and temperatures. |
| **EAD –** Explore, use and refine a variety of artistic effects to express their ideas and feelings.Return to and build on their previous learning, refining ideas and developing their ability to represent them.Create collaboratively, sharing ideas, resources and skills.**EAD ELG –** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.Share their creations, explaining the process they have used. | **Practical Skills****Materials**• Cut materials safely using tools provided.• Measure and mark out to the nearest centimetre.• Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).• Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). | **Practical Skills****Materials**• Cut materials accurately and safely by selecting appropriate tools.• Measure and mark out to the nearest millimetre.• Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).• Select appropriate joining techniques. | **Practical Skills****Materials**• Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).• Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). |
|  | **Practical Skills****Textiles**• Shape textiles using templates.• Join textiles using running stitch.• Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). | **Practical Skills****Textiles**• Understand the need for a seam allowance.• Join textiles with appropriate stitching.• Select the most appropriate techniques to decorate textiles. | **Practical Skills****Textiles**• Create objects (such as a cushion) that employ a seam allowance.• Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). |
|  | **Practical Skills****Electricals and Electronics**• Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage). | **Practical Skills****Electricals and Electronics**• Create series and parallel circuits | **Practical Skills****Electricals and Electronics**• Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). |
|  | **Practical Skills****Computing**• Model designs using software. | **Practical Skills****Computing**• Control and monitor models using software designed for this purpose. | **Practical Skills****Computing**• Write code to control and monitor models or products. |
|  | **Practical Skills****Construction**• Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. | **Practical Skills****Construction** • Choose suitable techniques to construct products or to repair items.• Strengthen materials using suitable techniques.  | **Practical Skills****Construction** • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). |
|  | **Practical Skills****Mechanics**• Create products using levers, wheels and winding mechanisms. | **Practical Skills****Mechanics**• Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). | **Practical Skills****Mechanics**• Convert rotary motion to linear using cams.• Use innovative combinations of electronics (or computing) and mechanics in product designs. |
|  | **Design, make, evaluate and improve**• Design products that have a clear purpose and an intended user.• Make products, refining the design as work progresses.• Use software to design. | **Design, make, evaluate and improve**• Design with purpose by identifying opportunities to design.• Make products by working efficiently (such as by carefully selecting materials).• Refine work and techniques as work progresses, continually evaluating the product design.• Use software to design and represent product designs. | **Design, make, evaluate and improve**• Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).• Make products through stages of prototypes, making continual refinements.• Ensure products have a high quality finish, using art skills where appropriate.• Use prototypes, cross-sectional diagrams and computer aided designs to represent designs. |
|  | **Take inspiration from design throughout history**• Explore objects and designs to identify likes and dislikes of the designs.• Suggest improvements to existing designs.• Explore how products have been created | **Take inspiration from design throughout history**• Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.• Improve upon existing designs, giving reasons for choices.• Disassemble products to understand how they work. | **Take inspiration from design throughout history**• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.• Create innovative designs that improve upon existing products.• Evaluate the design of products so as to suggest improvements to the user experience. |